

NEW SPECIES OF *FURCOMYIA* (*TIPULIDÆ*).BY CHAS. P. ALEXANDER, ITHACA, N. Y.<sup>1</sup>

The crane-flies herein characterized as new are, with one exception, Neotropical forms. There have been described by previous writers 15 species of South American *Limnobini* that I have no hesitation in referring to the genus *Furcomyia* (= *Dicranomyia* of authors). With the single exception of *F. muscosa* End. (Ecuador), the forms are Chilian or Patagonian, and are species named by Macquart,<sup>2</sup> Blanchard,<sup>3</sup> Philippi<sup>4</sup> and Bigot.<sup>5</sup> No species have been mentioned from the various countries of Middle America, and it is probably because of this fact that so many of the forms received proved to be novelties.

The material included is the property of Eastern Museums, as follows: U. S. National Museum, received through Mr. Frederick Knab, and the American Museum of Natural History, received through Mr. J. A. Grossbeck. I express my sincere gratitude to both of these gentlemen for their kind help in this respect.

*A Key to the spotted-winged Furcomyia.*

(South America (northern portion), Central America and the Antilles.)

1. Sc short, ending before, or opposite, or only slightly beyond, the origin of Rs. . . . . 2.  
Sc long, ending far beyond the origin of Rs. . . . . 5.
2. Wing-marking abundant, forming a network. . . . . 3.  
Wing-marking scanty, confined to the neighbourhood of veins. . . . . 4.
3. Legs with the femora uniform brown apically; wing pattern  
regular . . . . . *reticulata*, sp. n.  
(Cuba)  
Legs with the femora yellowish apically with a broad gray subapical ring; wing pattern irregular. . . . . *muscosa* Enderl.  
(Ecuador)
4. Legs black, a reddish annulus far before the tip of the femur; no supernumerary cross-vein in cell R<sub>3</sub>; seam on cord of wing, dark brown, narrow; antennæ dark except at base. . . . . *osterhouti*, sp. n.  
(Panama)

1. Contribution from the Entomological Laboratory, Cornell University.

2. Macquart, Pierre Justin; Dipt. Exot., Vol. I, pt. 1, p. 72 (1838).

3. Blanchard, Emile; in Historia fisica y politica de Chili Zoologia, Tome 7, pp. 337-344, esp. pp. 340-343 (1852).

4. Philippi, Rodolfo; Verhand. zool-bot. gesells. Wien., Vol. 15, pp. 597, 598, 602-617, 780, 781; esp. 612-614 (1865).

5. Bigot, Jacques; Mission Scientifique du Cap Horn, 1882-1883; Tome 6, 2nd part, pp. 5-10; esp. pp. 8, 9, pl. 2, fig. 2 (1888).

- Legs with the femora dark brown at the tip with an indistinct sub-apical ring ; a cross-vein in cell  $R_3$  ; seam on cord pale brown, broad ; antennæ pale . . . . . *translucida*, sp. n.  
(Panama)
5. Wings with an abundant pattern in the cells . . . . . *gloriosa*, sp. n.  
(Guatemala)
- Wings with the markings scanty and more or less confined to the neighbourhood of veins . . . . . 6.
6. Wing hyaline, with the markings brown ; pleuræ with a brown band ; tibiæ and tarsi uniform dark . . . . . *eiseni*, sp. n.  
(Guatemala)
- Wing dusky, with the markings dark brown ; no pleural band ; tibiæ at tip, and tarsi, orange brown . . . . . *lutzi*, sp. n.  
(Brit. Guiana)

*Furcomyia reticulata*, sp. n.

Antennæ brown ; thorax yellow, with an irregular brown median stripe ; legs yellow, darkening to brown apically ; wings hyaline, reticulated with brown marks.

♀.—Length, 4.5–6 mm ; wing, 5.3–5.4 mm.

♀.—Head : rostrum yellowish brown ; palpi dark brownish black. Antennæ, basal segments pale, whitish ; flagellum light brown, the segments rounded, becoming oval and then elongated toward the tip of the antennæ. Front, vertex and occiput dull yellow, the vertex and occiput prolonged caudad, with two brown stripes above and brown on the sides.

Thorax : pronotum brown, thickly yellow pollinose ; a small brown median spot at the caudal margin of the scutum. Mesonotum, præscutum dull yellow sericeous, a broad, light brown median stripe, overlain by a dark brown stripe, whose margins are very irregular ; two interrupted brown stripes on either side of the median mark, the outermost very pale on the margin of the sclerite ; scutum dull brown, with four brown stripes, continuations of the lateral præscutal vittæ ; the two stripes on each side unite at the caudal margin of the sclerite and run half across the scutellum ; scutellum very pale, whitish yellow, sending a median prolongation cephalad onto the scutum ; postnotum brown. Pleuræ light brown, thickly pale yellowish pollinose. Halteres very pale yellow, the knob brown. Legs : coxæ, trochanters and femora dull yellow, the femora darkening to brown apically ; extreme base of the tibiæ whitish, rest of tibiæ and the tarsi dark brown. Wings, veins brown, except costa, which is light yellow and black alternated ; membrane hyaline, costal cell with

small, equally-spaced brown marks ; from the base to the tip of  $R_1$  about 19, these marks a trifle narrower than the hyaline interspaces ; five large brown blotches along the radial cells, the first at the base of vein  $M$  ; second in middle of cell  $R$  ; third just before the origin of  $R_s$  ; fourth over the fork of  $R_s$ , and the last at the tip of  $R_{2+3}$ , irregular ; all the cells with narrow brown marks across them producing a net-work. Venation (see fig. p) :  $Sc$  short,  $Sc_1$  ending before the origin of  $R_s$ ,  $Sc_2$  about opposite it ;  $Sc_2$  longer than  $Sc_1$  ;  $R_s$  angular at base ; basal deflection of  $M_{1+2}$  long, so that the inner end of cell 1st  $M_2$  is almost on a level with cell  $R_3$  ; basal deflection of  $Cu_1$  before fork of  $M$ , sometimes far before ; cross-vein  $m$  far out, so that the deflection of  $M_3$  is much longer than  $m$ .

Abdomen, tergum, segments brown, darkest on caudal margin, paler on the sides ; sternum dull yellow ; a dark brown median spot on caudal margin of each sclerite.

Holotype, ♀.—Pinar del Rio, Cuba ; 1900 (Palmer and Riley).

Paratype, ♀.—Type locality, March 27, 1900 (Palmer and Riley).

Types in U. S. Nat. Mus. coll. (No. 15,133).

*Furcomyia osterhouti*, sp. n.

Whitish ; mesothoracic præscutum with a broad median stripe and two short lateral ones ; femora black, with a postmedian reddish annulus ; wings with brown spots, bands and seams.

♀.—Length, 6.5 mm (about) ; wing, 5.7 mm.

♀.—Head : rostrum and palpi dark brownish black. Antennæ, basal segments yellowish brown, flagellum very dark brown, almost black. Front, vertex and occiput pale, whitish, tinged with brown.

Thorax : pronotum dark brown above, abruptly pale, yellowish white on the sides. Mesonotum pale yellowish white, the median stripe broad, dark brown ; the lateral stripes appear on the hind margin of the præscutum and run back across the scutum and scutellum ; at the caudal end of the latter sclerite they unite and form a very broad median band, which occupies the dorsum of the postnotum. Pleuræ pale, whitish. Halteres, knob and most of the stem dark brown. Legs : coxæ and trochanters yellowish brown ; femora black, with a distinct reddish annulus at about three-fourths the length ; tibiæ reddish at base, rest of tibiæ and tarsi shiny black. Wing with a slight yellowish tinge, especially in the cephalic cells ; a very narrow brown mark from  $h$  caudad ; a brown mark from the tip of  $Sc_1$  down beyond  $R_s$  ; a brown mark at tip of  $R_1$  and on  $r$  ; a narrow seam along the cord ; outer end of cell 1st  $M_2$  seamed with brown ; most

of the veins seamed with brown; apical portions of the radial cells suffused with brown. Venation: (See fig. q.) Sc ends beyond origin of Rs, Sc<sub>2</sub> at its tip; cross-vein *r* at tip of R<sub>1</sub>; Rs arcuated at origin; basal deflection of Cu<sub>1</sub> before the fork of M.

Abdomen, tergum yellowish, the apex of each sclerite brown, with a narrow brown median band; sternum, markings less clearly defined.

Holotype, ♀.—Bocas d'Toro, Panama; Sept. 28, 1903. (P. Osterhout, coll.)

Type in U. S. Nat. Mus. coll. (No. 15,130.)

*Furcomyia translucida*, sp. n.

Whitish; mesothoracic præscutum with a narrow median brown stripe; femora darkened at the tip, pale subapically; wings with brown spots and bands; a supernumerary cross-vein in cell R<sub>3</sub>.

♂.—Length, 5.8 mm.; wing, 6.9 mm.; middle leg, femur, 5.7 mm.; tibia, 5.2 mm.

♂.—Head: rostrum and palpi dark brown. Antennæ, basal segments brown, flagellum yellowish, the terminal three or four segments brown; segments of the flagellum short, globular, the apical segments more elongated. Front, vertex and occiput light yellow, the vertex with a large brown spot in the centre.

Thorax: pronotum dark brown, becoming paler, yellowish white on the sides; mesonotum, præscutum very pale, almost white, with a clearly-defined dark brown median stripe, rather narrow, ending at the suture; scutum and scutellum pale, whitish, with a dark brown stripe on each lobe, running backward and meeting on the caudal margin of the scutellum; postnotum with a very broad brown median mark resulting from the confluence of the scutellar stripes. Pleuræ very pale, whitish; a brownish mark on the propleuræ above the fore coxa. Halteres pale, knob dark brown. Legs: coxæ and trochanters whitish; femora yellowish brown; a clearer yellow subapical ring, tip broadly brown, the extreme apex again rather lightened; tibiæ and tarsi brown, gradually increasing to dark brown. Wings: subhyaline or very faintly yellowish; a brown mark at the humeral cross-vein extending down across the arculus; a second mark at tip of Sc<sub>1</sub> and down across Rs almost to M; a third, extending into a cross-band, from the stigma, where it is darkest, unbroken across the cord; a brown seam on the supernumerary cross-vein in cell R<sub>3</sub>; outer end of cell 1st M<sub>2</sub> seamed with brown. Venation: (See fig. r.) Sc short, ending just beyond the origin of Rs; Sc<sub>2</sub> just opposite origin of Rs; R<sub>1</sub> extending beyond cross-vein *r-m*, *r* at its tip. Rs square at its origin and

spurred, in a line with  $R_{2+3}$ ; a strong cross-vein in cell  $R_3$  at about two-thirds of the length of the cell; cell 1st  $M_2$  rather elongate; basal deflection of  $Cu_1$  at the fork of  $M$ .

Abdomen: tergum pale yellowish white, apical fourth dark brown; apex sternum similar, but the dark apex not so clearly defined.

Holotype.—♂. Bocas d'Toro, Panama; Sept. 28, 1903. (P. Osterhout, coll.)

Type in U. S. Nat. Mus. coll. (No. 15,129)

*Furcomyia gloriosa* sp. n.

Antennæ brown; thorax gray, dorsum striped with darker; legs, femora dark on apical half, with a subterminal yellow ring; wing spotted and suffused with brown.

♀.—Length about 6.5 mm.; wing, 8.4 mm.

♀.—Head: rostrum and palpi dark brown. Antennæ, basal segments very dark brown; basal five flagellar segments lighter brown, apical segments dark brown. Front, vertex and occiput dull gray, with a black mark on vertex along inner margin of the eye.

Thorax: pronotum dull greenish gray pollinose, with a broad black stripe on the side of the scutum. Mesonotum, præscutum dark brown, thickly grayish pollinose, with a black stripe on either side of the narrow median gray line, running from the anterior margin of the sclerite almost to the suture. Lateral stripes short, broad, beginning behind the pseudo-sutural fovea, running across the suture and covering most of the scutum; scutum in middle and along the caudal margin dark brown; scutellum and postnotum dark brown. Pleuræ black, greenish gray pollinose. Halteres, stem pale yellowish brown, knob dark brown. Legs, coxæ and trochanters dark brown, the former gray pollinose; femora light yellow, the apical quarter dark brown, with a subapical yellow ring. Wings hyaline or nearly so; costal cell with four brown marks, the last at  $Sc$ , the 3rd over the origin of  $R_s$ ; a large square mark at the tip of  $R_1$  (stigmal) extending down over the fork of  $R_s$ ; cells 2nd  $R_1$  and  $R_3$  with large brown spots filling most of the cells; cells  $R_5$  to  $Cu_1$  suffused with lighter grayish brown and with hyaline spots; basal and anal cells with smaller brown spots; a series of about four in cell 1st  $A$ . Ends of veins  $Cu_2$ , 1st and 2nd  $A$ , with broad, grayish brown suffusions. Veins brown;  $Sc$  and  $R$  yellow, except where located in the brown markings, where they are black. Venation: (See fig. j.)  $Sc$  long, ending far beyond the origin of  $R_s$ , but slightly before its middle;  $R_s$  long; basal deflection of  $Cu_1$  far before the fork of  $M$ .

Abdomen, tergum dark brown; sternum lighter brown, extreme caudal margins of the sclerites light yellow.

Holotype.—♀. Totonicipan, Guatemala, Cent. Am., 1902. (Dr. G. Eisen.)

Type in U. S. Nat. Mus. coll. (No. 15,132.)

This insect agrees superficially with *muscosa* End.\* of Ecuador, but has *Sc* much longer, legs very different in colour, and is a much smaller species. *Muscosa* has a supernumerary cross-vein in cell  $R_3$ , but this may not be normal, as it is not mentioned in the specific description.

*Furcomyia eiseni*, sp. n.

Antennæ black throughout; body yellow; legs, femora yellow, passing into brown on the tibiæ and tarsi; wings hyaline, with six brown spots along costa, the second, largest, at origin of  $R_s$ .

♂.—Length, from 4.5–5 mm.; wing, 6.3–7.5 mm.

♀.—Length, from 4.5–6 mm.; wing, 5.7–7 mm.

Head: rostrum and palpi black. Antennæ black throughout in the ♂, with conspicuous long hairs, not so noticeable in the ♀. Front, vertex and occiput blackish, grayish pollinose in front.

Thorax: pronotum dull yellow; mesonotum dull reddish yellow, with a very indistinct darker median stripe and darker lateral stripes which are brownish, these continued back on the scutum, where they cover the lobes; scutellum and postnotum brownish. Pleuræ yellow, with a more or less conspicuous dark brown stripe running from the cervical sclerites to the postnotum. Halteres yellow at base; apical half of the stem and the knob brown. Legs: coxæ and trochanters light yellow; femora yellow at base, passing into brown; tibiæ and tarsi darker brown. Wings hyaline; cells *C* and *Sc* slightly yellowish; six brown marks along the costal margin on the cross-veins, as follows: A brown mark at the wing base; a large brown rectangular mark at the origin of  $R_s$ ; a third at the tip of *Sc*, where it is continued down over the fork of  $R_s$ , here meeting the fourth blotch, located at the tip of  $R_1$ ; the marks continuing across the cord; wing subapically largely dark; outer end of cell 1st  $M_2$  seamed with brown; a brown mark in the end of cell 2nd  $R_1$  and cell  $R_3$ ; ends of veins  $Cu_1$ ,  $Cu_2$  and 1st *A*, with small brown clouds; a large spot at end of 2nd *A*. Venation: (See fig. s.) *Sc* long, ending just before the fork of  $R_s$ ,  $Sc_2$  at its tip;  $\kappa_s$  square at its origin; base of cell 1st  $M_2$  arcuated, nearly on a level with the inner end of cell  $R_3$  (as in *stulta* O. S.);

\*1912. Zool. Jahrbuch.; pt. 1, pp. 75, 76; fig. W<sup>1</sup>. (*Dicranomyia*.)

basal deflection of  $Cu_1$  just beyond the fork of M;  $Cu_2$  generally shorter than the deflection of  $Cu_1$ .

Abdomen, tergum dark brown, the bases of the sclerites somewhat paler; sternum light yellow, the caudal and lateral margins conspicuously dark brown.

Holotype.—♂. Aguna, Guatemala, Cent. Am. (2,000 ft.); Sept., 1902. (Dr. G. Eisen, coll.)

Allotype.—♀. With the type.

Paratypes.—5, ♂ ♀. With the type.

Types in U. S. Nat. Mus. coll. (No. 15,131), except one paratype in author's collection.

*Iurcnyi lutzii*, sp. n.

Antennæ black; body orange; abdomen brown; legs black, tip of tibiæ and the tarsi pale, orange yellow; wings dusky, with brown marks.

♀.—Length about 6 mm.; wing, 7.3 mm.; middle leg, femur, 5.4 mm.; tibia, 5.8 mm.

Head: rostrum and palpi dark brownish black. Antennæ dark brownish black. Front thickly gray pollinose; vertex and occiput dark orange brown, brighter orange on the occiput.

Thorax: pronotum and mesonotal præscutum and scutum deep orange; scutellum and postnotum much lighter coloured, yellowish orange. Pleuræ orange yellow, lighter coloured ventrally. Halteres, stem yellowish basally, darkening to the blackish knob. Legs: coxæ and trochanters orange yellow, extreme base of femora yellow; remainder of femora and most of the tibiæ dark brownish black; tibiæ with the apical eight pale orange brown; tarsi orange brown. Wings suffused with dark brown, costal and subcostal cells and the radial cells very dark; dark brown spots arranged as follows: a rounded mark at the origin of Rs; one at fork of Rs, continued down the cord as a broken seam; a round spot at end of  $R_1$ ; outer end of cell 1st  $M_2$  seamed with dark brown. Venation: Sc long, ending nearer to the fork of Rs than to the origin,  $Sc_2$  at tip of  $Sc_1$ . Cross-vein  $r$  at the tip of Rs; deflection of  $R_{4+5}$  long; basal deflection of  $Cu_1$  far before the fork of M.

Abdomen, tergum, segments dark brown; sternum light yellow.

Holotype.—♀. Tukeit, British Guiana; July 19, 1911. (F. E. Lutz, coll.)

Type in American Museum of Natural History.

*Furcomyia omissa*, sp. n.

Small; dark brown; wings dark, stigma present;  $Sc_1$  short,  $Sc_2$  apparently lacking.

♀.—Length, 3.7–4 mm.; wing, 4–4.2 mm.

♀.—Head: rostrum and palpi dark brownish black. Antennæ brownish black. Front, vertex and occiput brown.

Thorax: mesonotum, præscutum with a thick brownish pollen, becoming grayish on the sides of the sclerite; a dark brown median stripe beginning near the anterior end of the sclerite, becoming narrower and finally obsolete before the suture; scutum, scutellum and postnotum dark brown. Pleuræ dark brown, with a sparse gray bloom on the middle of the thorax. Halteres dark brown; remainder of femora, tibiæ and tarsi dark brown. Wings somewhat suffused with darker; a small oval brown stigma. Venation: (See fig. o.)  $Sc$  short, ending far before the origin of  $Rs$ ,  $Sc_2$  not evident.  $Rs$  rather short, about one and one-half times the length of the deflection of  $R_{4+5}$ ; cross-vein  $m$  present in the type, absent in the paratype.

Abdomen dark brown.

Holotype.—♀. Aguna, Guatemala, Cent. Am. (Dr. G. Eisen.)

Paratype.—♀. Same as the type.

Types in U. S. Nat. Mus. coll. (No. 15,139.)

*Furcomyia knabi* sp. n.

Like *liberta* O. S., but ventral lobe of ♂ hypopygium produced entrad in a long slender arm.

♂.—Length, 6.5–7 mm.; wing, 8.8–9.8 mm.

♀.—Length, 7 mm.; wing, 9 mm.

Head: rostrum and palpi dark brownish black; antennæ black. Front, vertex and occiput clear gray.

Thorax: dorsum of the mesonotal præscutum suffused with brown, general colour brownish gray, much browner than the clear gray of the head; stripes on thoracic dorsum ill-defined; scutum dull gray, the scutellum very light gray; postnotum gray. Pleuræ grayish. Halteres yellow, knob brown. Legs: coxæ and trochanters brown; femora, tibiæ and tarsi dark brown. Wings almost as in *liberta* O. S., not pallid at base; a faint stigma at the tip of  $R_1$ . Venation: (See fig. m.)

Abdomen gray. Hypopygium: (See fig. w.) Dorsal aspect, 9th sternite very convex, ending in a small knob deeply bifid; pleuræ long, cylindrical, bearing two apical lobes; the dorsal lobe slender, chitinized, ending in an acute point; ventral lobe yellow, produced entad



into a long arm chitinized, its apex blunt but slightly notched. Ventral aspect, 9th tergite almost straight on caudal margin; pleuræ short, the inner caudal angle produced into a long appendage, which is tufted with yellow hairs at its tip; guard of the penis long, enlarged basally, projecting slightly beyond the apices of the pleural appendage; ventrad of the pleural arm is a slender acicular appendage.

Holotype.—♂. Totonicipan, Guatemala, 1902. (Dr. G. Eisen.)

Allotype.—♀. Antigua, Guatemala. (Dr. G. Eisen.)

Paratypes.—♂♂. Totonicipan, Guatemala. (Dr. G. Eisen.)

Types in U. S. Nat. Mus. coll. (No. 15,135). One paratype in author's collection.

Like *liberta* O. S. (Proc. Acad. Nat. Sci. Phil., 1859, p. 209; Monograph Dipt. N. Am., Vol. 4, p. 69), of the Eastern U. S., but larger, the mesothoracic præscutum browner and the stripes indistinct. In *liberta* the ♂ genitalia (fig. u) consists of short pleuræ, the swollen ventral lobes produced entad in a blunt knob, which bears two conspicuous caudad-projecting spines at its tip, the ventral one very stout, spine-like, the dorsal one more slender. In *knabi* the pleuræ are longer, the lobes short, the ventral one produced into a long arm, which is slightly notched apically.

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EXPLANATION OF PLATE XI.

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| Fig. h. | Wing of <i>Furcomyia andicola</i> , sp. n.   |
| “ i.    | “ <i>F. insignifica</i> , sp. n.   |
| “ j.    | “ <i>F. gloriosa</i> , sp. n.  |
| “ k.    | “ <i>F. argentina</i> , sp. n.   |
| “ l.    | “ <i>F. liberoides</i> , sp. n.  |
| “ m.    | “ <i>F. knabi</i> , sp. n.   |
| “ n.    | “ <i>F. simillima</i> , sp. n.   |
| “ o.    | “ <i>F. omissa</i> , sp. n.  |
| “ p.    | “ <i>F. reticulata</i> , sp. n.  |
| “ q.    | “ <i>F. osterhouti</i> , sp. n.  |
| “ r.    | “ <i>F. translucida</i> , sp. n.   |
| “ s.    | “ <i>F. eiseni</i> , sp. n.  |
| “ t.    | “ ? <i>F. fumosa</i> , sp. n.  |
| “ u.    | Hypopygium of <i>F. liberta</i> Osten Sacken.<br>v = ventral apical appendage.<br>d = dorsal apical appendage. |
| “ v.    | Hypopygium of <i>F. liberoides</i> , sp. n.  |
| “ w.    | “ <i>F. knabi</i> , sp. n.   |

(To be continued.)